


REMARKS

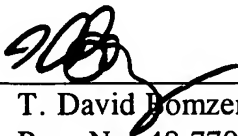
A set of claims more suitable for U.S. practice has been substituted for the original claims. Also, the specification and abstract have been revised for U.S. practice. Kindly note that reference numbers have been deleted from the specification and abstract to avoid any implication that the scope of the invention is expressly limited only to embodiments shown in the drawings.

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SYSTEM FOR FASTENING LINING

Technical Field Background of the Invention

5 This invention relates to constructional bearing system for fastening of all kinds of lining materials in interiors and also in exteriors to create technical or decorative wall surface design or to create spatial layout in room, to create sceneries and also to create protective and safety walls, especially designs which require variability of surface treatment and fast design variation and also an operative transposition of the constructional system. The present constructional system enables to create various shaped rooms and also cusped walls with various tilt angles and also rotary walls.

10 Till Now Known State of the Technique

Till now for wall lining standard systems are used mostly pasting various materials on wall surfaces and ceilings. These methods are disadvantageous because of the fact that the applied lining is ~~steady~~ attached without the possibility of a non-destructive removal and displacement. The removal of the lining is very laborious, noisy, harmful for the environment and ~~economically serious~~ costly, and at removal the lining is corrupted or damaged. Further lining fastening methods are known using various metallic or non-metallic bearing or frame structures on which the lining materials are fastened using screws, rivets or nails. Such lining fastening methods are suitable for stable created wall linings, but the protective and safety function of such structures is very low. The common disadvantage of the till now known lining fastening systems is the static sterility on lining base and the impossibility to change, replace simply ~~flexible~~ and flexibly the lining or quickly, operatively to locate the linings in the room.

Substance of the Invention Summary of the Invention

The object of the invention removing the above negatives is the constructional solution of the lining fastening system with the possibility of a variable layout and location of the constructional ~~system~~ system with the lining. The substance of the

5 constructional system according to the invention is that it consists of the supporting bar on which at least one inside fastening element is located on which the outside fastening element of the supporting bar is fixed with fixing screw, whereby on inside fixing element the gripping bracket is mounted fixed with the second fixing screw, whereby the gripping bracket is shaped as a longitudinal L profile and on the surface

10 of its shorter side at least two springing elements are located and on the surface of its longer side is at least one fixing hole. The gripping bracket is fitted on the surface of the shorter side at ~~least~~ least with two rectangular holes for setting of the gripping element and at least with two round ~~holes~~ holes for fixing of the springing elements, whereby at least one hole is in upper part on the surface of the longer side of the

15 gripping bracket. The gripping bracket is alternatively double sided so that on the surface of the shorter side of the gripping bracket are at least two springing elements and on opposite surface of the gripping bracket's shorter side at least two counter-directed springing elements are inserted. The gripping brackets with two springing elements are intended especially as border brackets. The extended gripping bracket

20 on gripping bracket's longer side is equipped with oval holes and the shorter side is equipped with two pairs of springing elements and for its placing apart from the border surface it is equipped on opposite surface of the shorter side with two pairs of counter-directed springing elements. On gripping bracket further rectangular holes are made into which the gripping elements are placed in which the lining is fastened.

25 For completion of the lining in constructional system in upper and/or lower

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horizontal plane on gripping bracket in second fastening hole by means of the third fixing screw the holder and locking element of the horizontal border bar ~~[[is]]~~ are fixed, whereby between the inside fixing element of the bearing bar and the outside fixing element of the bearing bar the locking plug of the lock is inserted. In

5 horizontal border bar is the ~~transversal~~ transverse groove on horizontal border bar into which the gripping elements are inserted in which the lining is inserted. For fastening of the lining outside of the border field the constructional system is equipped with the enlarged gripping bracket made as a longitudinal L-profile and its surface on longer side is equipped with oval hole for fixing on bearing bar and

10 fastening of the holder on horizontal border bar, of the locking element on horizontal border bar and of the locking plug on lock, whereby on surface of its shorter side two pairs of springing elements are placed and for the placing outside of the border field on opposite surface of the shorter side two pairs of opposite directed springing elements are placed. For completion of the constructional system in vertical direction

15 on bearing bar the extended holder of the vertical border bar is fixed by means of the fourth fixing screw, which is located on inside fixing element of the supporting bar, whereby the longitudinal holder of the vertical border bar is an enlarged L-profile, whereby on its surface at shorter side an oval hole is made and on surface at its longer side at least two oval holes are made and at least one round hole. Alternatively

20 on supporting bar in front of the outside fixing element the short holder of the border bar is positioned, fixed by means of the fixing screw. The short holder of the border bar is a horizontal L-profile, whereby on the surface of its shorter side at least one oval hole and on surface of its longer side the fixing hole for the short holder of the vertical border bar are made. In order to ensure the required dimensions of the

25 constructional system on surface of the bearing bar the rectifying element of the supporting bar for assembling the supporting bars and for fixing of the constructional system in a room is located, which is equipped with the shifting jointing element of

the supporting bar and on opposite side of the rectifying element on supporting bar the fixed jointing element of the supporting bar is fastened, whereby the rectifying element in conjunction with the shifting jointing element and fixed jointing element of the supporting bar enable to create lining surfaces with various inclination angles and to set the distance from base on which the constructional system with the lining is mounted. The lining is fixed by means of ~~the made circumferential~~ engagement of a peripheral groove therein with the gripping elements, which are fixed in gripping brackets or in extended gripping brackets, whereby in horizontal border bar ~~[[the]]~~ a transverse groove of the horizontal border bar is [[made]] formed into which the locking element of the horizontal border bar is inserted, whereby in horizontal border bar is the lock with the latch protecting preventing release of the lining against disassembling. The constructional system is equipped with protection against unauthorized disassembling or theft ~~so that~~ by the lock with the latch in the horizontal border bar is the lock with the latch. This protection may be in upper and/or in lower horizontal border bar.

~~Abstract of the Figures on Drawings~~ Brief Description of the Drawings

The invention is clarified by means of figures on drawings.

~~[[The]]~~Fig. 1 ~~plots~~ is a perspective view of the basic unit of the constructional system of this invention for fastening the linings.

~~[[The]]~~Fig. 1a ~~presents~~ is a perspective view of the basic unit of the constructional system for fastening the linings with inserted gripping elements for placing and fastening of the lining into the constructional system~~[[,]]~~;

~~[[the]]~~Fig. 1b ~~presents~~ is a perspective view of the extended unit of the constructional system with gripping elements ~~stated~~ for constructional system inside of its area~~[[.]]~~;

~~The figures~~ Figs. 2, 3, 4, 5, 5a, 6, 7, 8, 9, 10, 11, 12, 13, 14, 14a, 14b, 15, 16 and 17 present are perspective views of the basic elements of the constructional system[[,]] as follows:

5 [[the]]Fig. 2 ~~plots~~ is a perspective view of the stable jointing element of the supporting bar[[,]];

[[the]]Fig.3 is a perspective view of the shifting jointing element of the supporting bar[[,]];

[[the]]Fig. 4 is a perspective view of the rectifying element of the supporting bar[[,]];

[[the]]Fig. 5 is a perspective view of the supporting bar[[,]];

10 [[the]]Fig. 6 is a perspective view of the inside fixing element of the supporting bar[[,]];

Fig. 7 is a perspective view of the outside fixing element of the supporting bar[[,]];

Fig.8 is a perspective view of the inside flat fixing element of the supporting bar[[,]];

[[the]]Fig. 9 is a perspective view of the holder of the horizontal border bar[[,]];

15 Fig. 10 is a perspective view of the locking element of the horizontal border bar[[,]];

Fig. 11 is a perspective view of the locking plug of the lock[[,]];

Fig. 12 is a perspective view of the short holder of the vertical border bar[[,]];

Fig. 13 is a perspective view of the extended holder of the vertical border bar[[,]]

Fig. 14 is a perspective view of the gripping bracket; [[and]]

20 Fig. 14a is a perspective view of the gripping bracket with springing elements; [[and]]

Fig.14b is a perspective view of the extended gripping bracked[[,]];

Fig. 15 is a perspective view of the fixing screws[[,]];

Fig. 16 is a perspective view of the gripping element; [[and]]

25 Fig. 17 ~~presents~~ is a perspective view of the springing elements[[,]];

[[The]]Fig. 18 ~~plots~~ is a perspective view of the set up of the gripping bracket with springing elements set on fixing element of the supporting bar; [[and]]

Fig 18a ~~plots~~ is a perspective view of the positioning of the gripping element on gripping bracket[[,]];

Fig. 19 ~~plots~~ is a perspective view of the set up of the gripping bracket with the holder of the lower bar, locking element of the horizontal border bar and locking plug of the lock[[,]];

Fig.19a ~~plots~~ is a perspective view of the set up as in Fig.19 with gripping element[[,]];

Fig. 20 ~~plots~~ is a perspective view of the gripping of the short holder on vertical border bar[[,]];

Fig. 21 ~~plots~~ is a perspective view of the gripping of the extended holder on vertical border bar[[.]];

Fig. 23 ~~plots~~ shows the constructional system with mounted lining in cross-section with horizontal border bar with lock in closed position; [[and]]

Fig. 24. ~~plots~~ shows the constructional system with mounted lining in cross-section with horizontal border bar with lock in released position[[.]];

Fig. 25 ~~plots~~ shows the constructional system in cross-section with double sided lining.

Examples for Realization of the Invention Detailed Description of the Invention

Example 1

The lining fastening constructional system according to the invention is in concrete example represented in figures 14, 14a, 18 and 18a comprising of gripping bracket [[13]]13, which is equipped on surface [[132]] 132 of the shorter side with four longitudinal holes ~~135, 135a, 135b and 135c~~ 135, 135a, 135b and 135c for the positioning of the gripping element 16 and four round holes ~~136, 136a, 136b and~~

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136, 136a, 136b and 136c for fastening of the springing elements ~~[[17]]~~ 17, whereby the ~~grippibg~~ gripping bracket ~~[[13]]~~ 13 is in upper surface part ~~[[133]]~~ 133 of the longer side equipped with holes ~~137 and 137a~~ 137 and 137a and in middle surface part ~~[[133]]~~ 133 of the longer side are two oval fastening holes ~~134 and 134a~~ 134 and 134a. The gripping bracket ~~[[13]]~~ 13 is fastened on supporting bar ~~[[4]]~~ 4 by means of the fixing screw ~~[[151]]~~ 151 positioned in inside fixing element ~~[[5]]~~ 5 of the supporting bar and is fixed with the outside fixing element ~~[[6]]~~ 6 of the supporting bar, which is fixed with the fixing screw ~~[[15]]~~ 15. The mentioned gripping bracket ~~[[13]]~~ 13 is used as border gripping bracket without locking.

10 Example 2

The lining fastening constructional system according to the invention is in concrete example represented in figures 1, 1A, 1b, 14, 14a, 14b, 18 and 18a according to example 1 is on opposite surface of the shorter side ~~[[132a]]~~ 132a of the gripping bracket equipped with two counter directed springing elements ~~[[17a]]~~ 17a. This gripping bracket ~~[[13]]~~ 13 is used as continuous gripping bracket.

Example 3

The lining fastening constructional system according to the invention is in concrete example represented in figures 19 and 19a according to example 1 on gripping bracket ~~[[13]]~~ 13 in second fixing hole ~~[[134a]]~~ 134a by means of third fixing screw ~~152 is~~ 152 is fixed the holder ~~[[8]]~~ 8 and the locking element ~~[[9]]~~ 9 of the horizontal border bar ~~[[18]]~~ 18, whereby between the inside fixing element ~~[[5]]~~ 5 of the supporting bar and the outside fixing element ~~[[6]]~~ 6 of the supporting bar the locking plug ~~[[10]]~~ 10 of the lock ~~[[19]]~~ 19 is inserted, whereby the locking plug ~~[[10]]~~ 10 has

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on surface [[10a]]10a the hole [[101]]101 for the locking plug and the locking element [[9]]9 on horizontal border bar has on surface [[9a]]9a of the locking element the oval hole [[91]]91, which enables to use shifting lock-in or unlocking of the horizontal border bar [[18]]18. This gripping bracket [[13]]13 is used as border gripping bracket with locking system.

Example 4

The lining fastening constructional system according to the invention is in concrete example represented in figures 1b and 14b according to example 1 the gripping bracket is made in form of extended gripping bracket [[14]]14, which is equipped on surface [[143]]143 of the gripping bracket with oval holes ~~144, 144a, 144b, 144c, 144d~~ 144, 144a, 144b, 144c, 144d and on surface [[142]]142 are positioned the springing elements [[17]]17 and [[17a]]17a and for its location out of the border bar on opposite surface [[142a]]142a of the shorter side is equipped with two pairs of counter-directed springing elements [[17]]17 and [[17a]]17a.

Example 5

The lining fastening constructional system according to the invention is in concrete example represented in figures 1b and 14 b according to Example 4 the gripping bracket 14 is extended made in form of a longitudinal L-profile and on surface [[143]]143 of the longer side is equipped with oval holes ~~144, 144a, 144b, 144c, 144d~~ 144, 144a, 144b, 144c, 144d for its fixing on supporting bar [[4]]4 and for fastening of the holder [[8]]8 of the horizontal border bar, locking element [[9]]9 of the horizontal border bar and locking plug [[10]]10 of the lock.

Example 6

The lining fastening constructional system according to the invention in concrete example represented in Fig. 1 comprises of supporting bar [[4]]4 in which the inside fixing element [[5]]5 is positioned, on which with the outside fixing element [[6]]6 of the supporting bar is fastened with fixing screw [[15]]15, whereby on inside fixing element [[5]]5 the gripping bracket [[13]]13 is inserted fixed with the second fixing screw [[151]]151, whereby the gripping bracket [[13]]13 is made in form of a longitudinal L-profile and on surface [[132]]132 of the shorter side at least two springing elements [[17]]17 are located and on surface [[133]]133 of the longer side oval fixing holes [[134]]134 and [[134a]]134a are made. In gripping bracket [[13]]13 on surface [[132]]132 of the shorter stide four rectangular holes ~~135, 135a, 135b~~ 135, 135a, 135b and 135c are made for the positioning of the gripping element [[16]]16 and four round holes ~~136, 136a, 136b~~ 136, 136a, 136b and [[136c]] 136c for fixing of the springing elements [[17]]17 and [[17a]]17a, whereby at gripping bracket in upper part [[133]]133 on surface of the longer side two holes [[134]]134 and ~~134a~~ 134a are made. The gripping bracket [[13]]13 is double sided so that on surface of the shorter side [[132]]132 of the gripping bracket two springing elements [[17]]17 are located and on opposite surface of the shorter side [[132a]]132a on gripping bracket are two counter-directed springing elements [[17a]]17a. In gripping bracket [[13]]13 are further four rectangular holes ~~135, 135a, 135b~~ 135, 135a, 135b and [[135c]]135c into which the gripping elements [[16]]16 are inserted for fastening of the lining [[20]]20. In order to finish the lining [[20]]20 on constructional system at upper and/or lower surface on gripping bracket [[13a]]13a fixed in second fixing hole [[134a]]134a by means of the fixing screw [[152]]152 is the holder [[8]]8 of the horizontal border bar and the locking element [[9]]9 of the

horizontal border bar, whereby between the inside fixing element [[5]]5 of the bearing bar and outside fixing element 6 of the bearing bar the locking plug [[10]]10 of the lock is inserted. In horizontal border bar [[18]]18 the transversal groove [[181]]181 of the horizontal border bar in which the gripping elements [[16]]16 are inserted and into which the lining [[20]]20 is mounted. In order to finish the constructional system in vertical level to supporting bar [[4]]4 the extended holder [[12]]12 of the vertical border bar is fixed by means of the fourth fixing screw [[153]]153, which is located in inside fixing element [[5]]5 of the supporting bar, whereby the extended holder [[12]]12 of the vertical border bar is extended L-shaped, whereby on its surface [[121]]121 at shorter side [[121a]]121a is the oval hole [[12a]]12a and on surface at its longer side [[122]]122 are two oval holes [[12b]]12b and [[12c]]12c and one round hole [[12d]]12d. On supporting bar [[4]]4 below the extended holder [[12]]12 at vertical border bar is the second gripping bracket [[13a]]13a and in its second fixing hole [[134a]]134a by means of the third fixing screw [[152]]152 is fixed the holder [[8a]]8a and the locking element [[9]]9 on horizontal border bar [[18]]18, whereby between inside fixing element [[5]]5 on supporting bar and outside fixing element [[6]]6 on supporting bar the locking plug [[10]]10 of the lock ~~19~~ 19 is inserted. Below the gripping bracket [[13a]]13a is on supporting bar [[4]]4 in front of outside fixing element [[6]]6 the short holder of the vertical border bar [[11]]11 fixed with fixing screw [[15a]]15a.

Example 7

Lining fastening constructional system according to the invention in concrete example represented in Fig. 1 according to example 6, which has on rear surface

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4ab on supporting bar the rectifying element 3 of the supporting bar for jointing the supporting bars 4 up to 4n and for fixing the constructional system in room, on which the shifting jointing element 2 is fixed and on opposite side of the rectifying element 3 is fastened the fixed jointing element 1 of the supporting bar, whereby
5 the rectifying element 3 in conjunction with the shifting jointing element 2 and fixed jointing element 1 enables to make lining surfaces with various inclination angles and to set the distance from base on which the constructional system with the lining 20 is located.

Example 8

10 Lining fastening constructional system according to the invention in concrete example represented in Fig. 1 and 1a according to examples 6 and 7, which has on gripping bracket [[13]]13 the gripping element [[16]]16 and on gripping bracket [[13a]]13a the gripping element [[16a]]16a.

Example 9

15 Lining fastening constructional system according to the invention in concrete example represented on Fig. 1b according to examples 6 or 7, with extended gripping bracket [[14]]14 on which the gripping elements 16 are mounted.

Example 10

20 Lining fastening constructional system according to the invention in concrete example represented on Fig. 1 and 1a according to examples 6 and 7 with the

gripping element [[16]]16 on gripping bracket and with the gripping element [[16a]]16a on gripping bracket [[13a]]13a.

Example 11

5 Lining fastening constructional system according to the invention in concrete example represented on Fig. 20 with the short holder [[11]]11 of the vertical border bar fixed on supporting bar [[4]]4 by means of the fixing screw [[15]]15 and the inside plane fixing element [[7]]7 of the supporting bar.

Example 12

10 Lining fastening constructional system according to the invention in concrete example represented on Fig. 21 with the extended holder [[12]]12 of the vertical border bar on supporting bar [[4]]4 fixed by means off fixing screw [[15]]15 and inside fixing element [[5]]5 on supporting bar.

Example 13

15 Lining fastening constructional system according to the invention in concrete example represented on Fig. 22 according to examples 6 and 7 having on supporting bar [[4]]4 and [[4a]]4a the rectifying element [[3]]3 for jointing of the supporting bars and for creating of the constructional system in requested dimensions and design, whereby in supporting bar [[4]]4 is the inside fixing element [[5]]5 of the supporting bar fixed by outside fixing element [[6]]6 of the supporting bar and with
20 fixing screw [[15]]15 fixed in hole [[53]]53 on inside fixing element [[5]]5 of the supporting bar, whereby the outside fixing element [[6]]6 of the supporting bar is

equipped with the latch [[6a]]6a positioned in hole [[52]]52 of the inside fixing element [[5]]5 of the supporting bar and the hole [[51]]51 of the inside fixing element [[5]]5 on supporting bar is designed for placing of the gripping bracket [[13]]13 or of the extended gripping bracket [[14]]14 and on supporting bar [[4a]]4a is the inside fixing element [[5a]]5a of the supporting bar, which is fixed with the outside fixing element [[6a]]6a of the supporting bar and with the fixing screw [[15a]]15a fixed in hole [[53]]53 on inside fixing element [[5a]]5a of the supporting bar, whereby the outside fixing element [[6a]]6a of the supporting bar is equipped with the latch [[6]]6 positioned in hole [[52]]52 of the inside fixing element [[5a]]5a on supporting bar and the hole [[51]]51 on inside fixing element [[5a]]5a of the supporting bar is designed for placing of the gripping bracket [[13]]13 or extended gripping bracket [[14a]]14a.

Example 14

The lining fastening constructional system according to the invention in concrete example represented on Fig. 23 plots the fitting of the lining [[20]]20 by means of the made circumferential lining groove 200 in lining, in which the gripping elements [[16]]16 up to [[16n]]16n are inserted, which are fixed on gripping brackets [[13]]13 up to [[13n]]13n or on extended gripping brackets [[14]]14 up to [[14n]]14n, whereby on horizontal border bar [[18]]18 is the transverse groove [[181]]181 in horizontal border bar into which the locking element [[9]]9 of the horizontal border bar is inserted, whereby in horizontal border bar [[18]]18 is the lock [[19]]19 with the latch [[191]]191 ensuring the lining against disassembling in locked position.

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The lining fastening constructional system according to the invention in concrete example represented on Fig. 24 plots the constructional system with lining as according to example No. 13 with the lock [[19]]19 unlocked position.

Example 16

- 5 The lining fastening constructional system according to the invention in concrete example represented on Fig. 25 plots the constructional system with lining [[20]]20, which is mounted in continuous gripping bracket [[14]]14 up to [[14n]]14n by means of gripping elements [[16]]16 up to [[16n]]16n.

Industrial Utilizability

- 10 The lining fastening constructional system can be well used in piece production, serial production and also in automated production and it is utilizable wheresoever it is necessary or desirable to fasten arbitrary planar materials for various surfaces and for various purposes, e.g. glass, plastics, wood, metal whether complete materials as well as perforated materials, sieves, gratings, structured materials, sound
15 accomodating materials and similar materials, especially there, where variability at changes of linings and fast variability of for their lay-out in room is required.

- 20 The utilization of the constructional system is very various, e.g. for decorative purposes, interiors, wall facing, various sceneries, for broadcasting telecasting studios and also for exhibition purposes, for arrangement of show-rooms, for making of panels and party walls. The above utilization does not limit further possibilities at application of the presented invention.